In the claims:

For the convenience of the Examiner, all claims being examined, whether or not amended, are presented below.

1. (Currently amended) A method for inhibiting unwanted mitotic cell proliferation in an animal, wherein the mitotic cell proliferation is associated with a cancer, comprising administering to the animal a composition comprising an effective amount of a purified organic molecule having a molecular weight less than 750 amu, wherein the organic molecule interacts with *smoothened* and lessens the severity of a *hedgehog* gain-of-function, *patched* loss-of-function, or *smoothened* gain-of-function phenotype.

2-14. (Cancelled)

15. (Previously presented) The method of any of claim 1, wherein the organic molecule inhibits hedgehog-mediated signal transduction with an ED_{50} of 1 mM or less.

16. (Previously presented) The method of any of claim 1, wherein the organic molecule inhibits hedgehog-mediated signal transduction with an ED_{50} of 1 μM or less.

17. (Previously presented) The method of any of claim 1, wherein the organic molecule inhibits hedgehog-mediated signal transduction with an ED_{50} of 1 nM or less.

18-19. (Cancelled)

20. (Previously presented) The method of claim 1, wherein the organic molecule is administered as part of a therapeutic or cosmetic application.

21. (Cancelled)

22. (Previously presented) The method of claim 1, wherein the organic molecule is administered as a topical formulation to skin.

23. (Previously presented) The method of claim 1, wherein the organic molecule is administered to the patient to inhibit growth of a basal cell carcinoma.

24-26. (Cancelled)

27. (Currently amended) A method for inhibiting unwanted mitotic cell proliferation in an animal, wherein the mitotic cell proliferation is associated with a cancer, comprising topically administering to the animal a composition comprising an effective amount of a purified hedgehog antagonist, wherein the hedgehog antagonist is an organic molecule having a molecular weight less than 750 amu and which interacts with *smoothened* and lessens the severity of a *hedgehog* gain-of-function, *patched* loss-of-function, or *smoothened* gain-of-function phenotype.

28. (Currently amended) A method for inhibiting unwanted mitotic cell proliferation in an animal, wherein the mitotic cell proliferation is associated with a cancer, comprising topically administering to the animal a composition comprising an effective amount of a purified hedgehog antagonist, wherein the hedgehog antagonist is an organic molecule which interacts with *smoothened* lessens the severity of a *hedgehog* gain-of-function, *patched* loss-of-function, or *smoothened* gain-of-function phenotype.

29-35. (Cancelled)

36. (Currently amended) A method for inhibiting unwanted mitotic cell proliferation in an animal, wherein the mitotic cell proliferation is associated with a cancer, comprising

providing a cell,

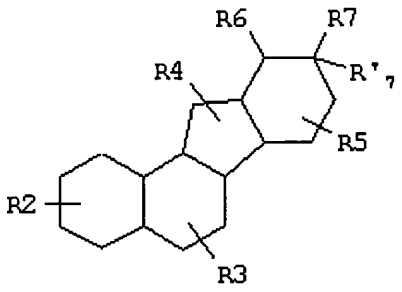
treating the cell with a test compound, wherein the test compound is an organic molecule having a molecular weight less than 750 amu,

detecting a decrease in the level of unwanted mitotic proliferation in the cell indicative of a *hedgehog* inhibitory activity of the test compound, and

administering to the animal a composition comprising the test compound having a *hedgehog* inhibitory activity in an amount sufficient to reduce the unwanted mitotic proliferation in a cell of the animal.

37. (Previously presented) The method of claims 1, 27, 28, or 36, wherein inhibiting unwanted mitotic cell proliferation comprises treating medulloblastoma.

38. (Previously presented) The method of claims 1, 27, 28, or 36, wherein the composition comprises a compound represented in the general formula (I), or unsaturated forms thereof, or pharmaceutically acceptable salts thereof, and/or seco-, nor- or homo-derivatives thereof:



Formula I

wherein, as valence permits,

R_2, R_3, R_4, and R_5 independently for each occurrence, represent one or more substituents selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_6, R_7, and R'_7 are absent or represent, independently for each occurrence, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$, or

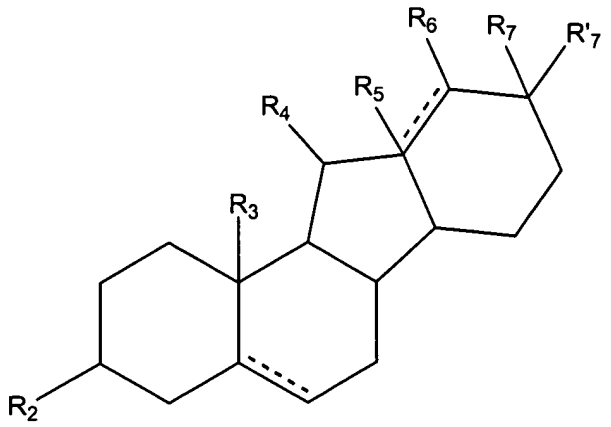
R_6 and R_7, or R_7 and R'_7, taken together form a ring or polycyclic ring;

with the proviso that at least one of R_6, R_7, or R'_7 is present and includes a primary or secondary amine;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle; and

m is an integer in the range 0 to 8 inclusive.

39. (Previously presented) The method of claims 1, 27, 28, or 36 wherein the composition comprises a compound represented in the general formula (II), or unsaturated forms thereof, or pharmaceutically acceptable salts thereof, and/or seco-, nor- or homo-derivatives thereof:



Formula II

wherein

R_2 and R_4, independently for each occurrence, represent one or more substituents selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_3, and R_5, independently for each occurrence, represent one or more substituents selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_6, R_7, and R'_7 are absent or represent, independently, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$, or

R_6 and R_7, or R_7 and R'_7, taken together form a ring or polycyclic ring,

with the proviso that at least one of R_6, R_7, or R'_7 is present and includes a primary or secondary amine;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle; and
m is an integer in the range 0 to 8 inclusive.

40. (Cancelled)

41. (New) The method of any one of claims 1, 15-17, 20, 22, 27-28, 36, and 38-39, wherein the cancer is a basal cell carcinoma, medulloblastoma, squamous cell carcinoma, carcinosarcoma, adenocystic carcinoma, epidermoid carcinoma, nasopharyngeal carcinoma, renal cell carcinoma, papilloma, or an epidermoidoma.